Safety, Health, and Environmental Division

NASA
Acquisition Pollution Prevention (AP2) Program

KSC Environmental Council Meeting
November 6, 2003

Ms. Christina Brown
Program Manager
YA-E2

AP2 Program Background

- AP2 Program evolved out of DoD/NASA Joint Group on Pollution Prevention (JG-PP) in 1998

- KSC selected as Lead Center for this Agency Program
  - MOA between KSC, Code JE & Code M

- The Program Office is located within the Spaceport Engineering & Technology Directorate (YA), Operational Spaceport Project Office (YA-E2)
  - 1 Government Service FTE Program Manager with Contractor support, International Trade Bridge, Inc.

- Agency Environmental Compliance & Restoration (ECR) funding

AP2 Program Mission Relationships

Identify & validate pollution prevention technologies

NASA Mission: Understand & protect our home planet
KSC Principle: Environmental Stewardship

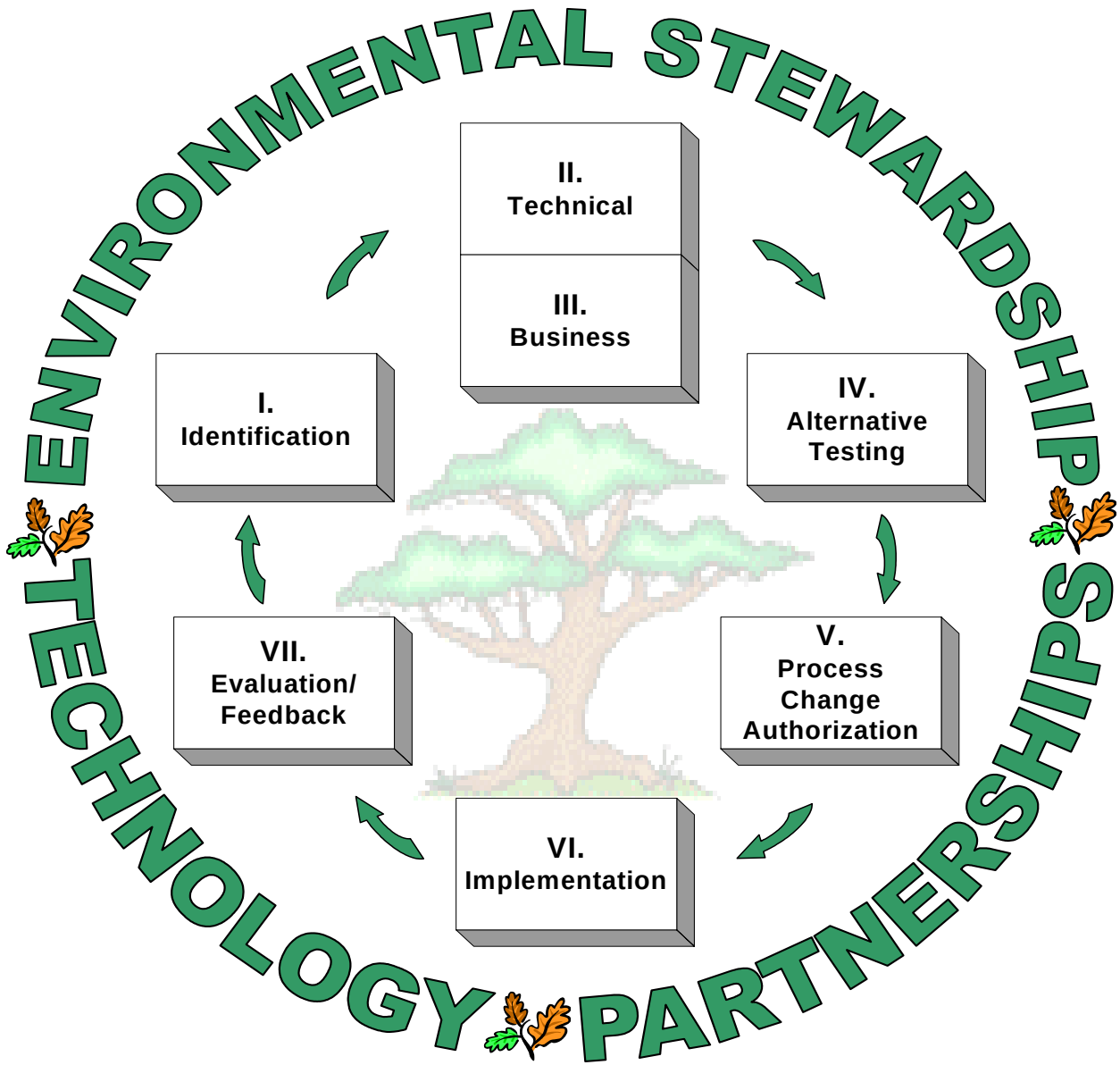
Through Joint activities

One NASA: Foster more collaboration across the Agency
KSC Principle: Build reliability and teamwork everywhere

That enhance mission readiness and reduce risk while minimizing duplication and associated costs

One NASA: Promoting more efficient systems & processes
KSC Principle: Safety & health first

Safety, Health, and Environmental Division



AP2 Program Products

- **Performance Metrics**
  - Environmental Benefit
  - Economic Benefit
  - Technology Migration
  - Earned Value
- **Project Documents**
  - Joint Test Protocol (JTP)
  - Potential Alternatives Report (PAR)
  - Cost-Benefit Analysis (CBA)
  - Joint Test Report (JTR)

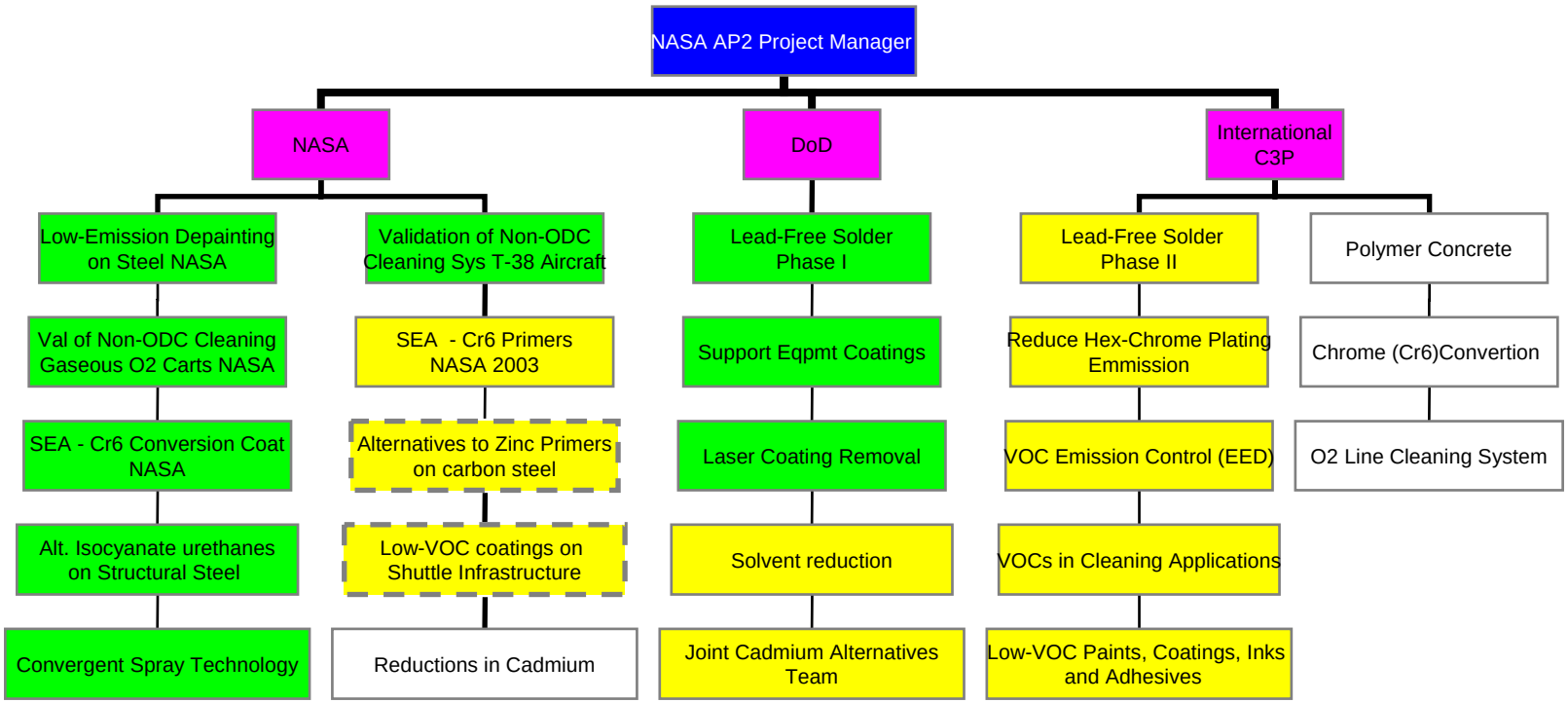
AP2 Business Segments

- Intra-Agency Activities
  - Joint P2 Projects involving multiple enterprises, programs, and centers
  - Support to the Shuttle Environmental Assurance Initiative (SEA)

- DoD/AP2 Activities
  - Joint Group on Pollution Prevention (JG-PP)
  - AF Space Command Pollution Prevention Program

- International/AP2 Activities
  - MOA signed with Portuguese Ministry of Environment
    - Established a Portuguese Center for Pollution Prevention (C3P)
  - Conducted Needs Assessments at 24 government and industrial facilities
  - Co-hosted Technical Workshop Sept. 19, 2003
  - Engaged in project development activities

Current Activities



= active project

= developing project

= transition to developing project

= for future consideration

Alternatives to Aliphatic Isocyanate Urethanes on Carbon Steel Structural Elements

- **Objective:** Validation of alternatives to Aliphatic Isocyanate Urethanes

- **Justification:** Environmental, Health and Safety benefits

- **Accomplishments:**
  - Stakeholders have been identified: **KSC, JSC, DRC, SSC, ARC, GSFC, JPL**
  - Identifying technical requirements

– **Future**
  - Develop JTP and PAR
  - Testing of alternatives

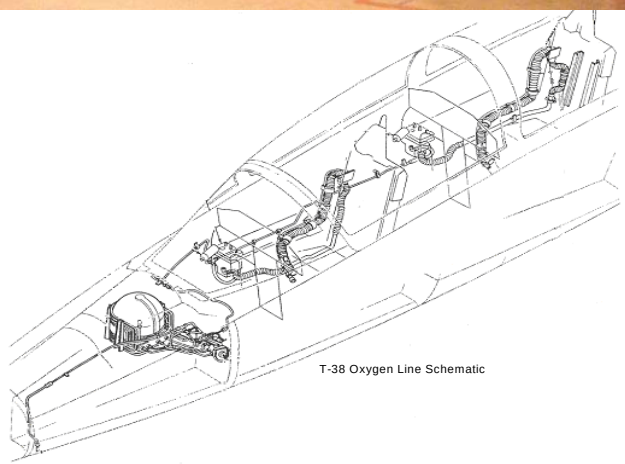
Low-emission Surface Preparation / Depainting Technologies for Carbon Steel Structural Elements

- **Objective:** Alternative surface preparation / depainting technologies.
- **Justification:** Corrosion prevention; environmental, health and cost benefits
- **Accomplishments:**
  - Stakeholders have been identified: **KSC, JSC, DRC, SSC, ARC, GSFC, JPL**
  - Identifying technical requirements

– **Future**
  - Develop JTP and PAR
  - Testing of alternatives

Non-ozone Depleting Cleaning System for On-Aircraft Oxygen Lines

- **Objective:** Non-ozone depleting cleaning system for on-aircraft oxygen lines
- **Justification:** CFC-113 (Freon) is a VOC and Clean Air Act HAP. Time and cost benefits.
- **Accomplishments:**
  - Development of an environmentally friendly system
  - Stakeholder interest has been determined: **JSC, NASA HQ**
- **– Future**
  - Demonstration of the system on a T-38 aircraft



JCAA/JG-PP Lead-Free Solder Project

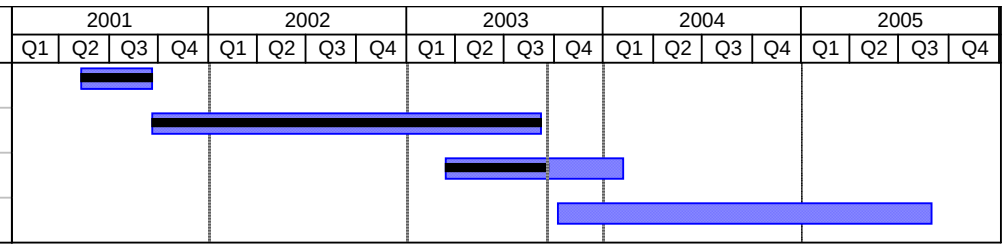
- **Objective:** To generate baseline performance/reliability test data of three promising lead-free solder alloys on a simulated test board.
- **Justification:** Asian marketing and European regulatory pressures are driving the restriction of tin-lead solders in electronics. NASA, as part of team, contributed $350K to receive $1.2M worth of lead-free solder testing (3.5-to-1 return on investment).
- **Accomplishments:**
  - Completed technical and business phases
  - Procuring testing materials and preparing testing sites
- **– Future**
  - Conduct testing (Q1 2004 thru Q2 2005)
  - Report results and conclusions (Q2 2005)

Lead-Free Solder Test Sites

- American Competitiveness Institute, PA
- Boeing-Irving, TX
- Boeing-Phantom Works, Seattle, WA
- Boeing-Anaheim, CA
- Raytheon-Dallas, TX
- Rockwell Collins-Cedar Rapids, IA
- Sandia National Laboratories-Albuquerque, NM

Lead-Free Solder Schedule

ID	Task Name	Start	Finish
1	Phase I Identification	Wed 05/09/01	Fri 09/14/01
2	Phase II Technical	Mon 09/17/01	Thu 09/04/03
3	Phase III Business	Fri 03/14/03	Mon 02/02/04
4	Phase IV Testing	Mon 10/06/03	Fri 08/26/05



- Task not funded as yet
- Task funded but not yet started
- Task funded and in progress
- Task complete

Summary
Contact Information

- **NASA AP2 Website:**
  http://www.acqp2.nasa.gov/

- **JG-PP Website:**
  http://www.jgpp.com

- Christina Brown
  AP2 Program Manager and
  NASA JG-PP Working Group Representative
  Phone: (321) 867-8463
  E-Mail: Christina.M.Brown@nasa.gov